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## *Fax Cover Sheet*

**DATE:** September 18, 2002

**FROM:** Sean L. Ingram

**CLIENT:** 23452-092

*Direct Dial* (703) 464-8140

Attorney No.

2911

Client No.

23452

Matter No.

092

**To:**

NAME	COMPANY	BUSINESS #	FAX #
Customer Service (Tech Center 2100)	USPTO	703-306-5631	703-746-7240

**MESSAGE:**

**Application No.: 09/384,088**

**ATTN: Group 2177**

Further to my September 17, 2002 telephone conversation with Examiner Srirama Channavajjala, please find attached a copy of the CPA Request Transmittal and a Preliminary Amendment that were originally filed in the USPTO on August 28, 2002. Apparently, the Preliminary Amendment was separated from the file at the USPTO and never reached Examiner Channavajjala. Therefore, please officially enter the Preliminary Amendment and forward it to Examiner Channavajjala.

Please call me if you have any questions relating to this application.

Thank you,  
Sean L. Ingram  
Reg. 48,283

We are sending a total of 27 pages, including this cover sheet.

RES 76887v1

Please call us at 703.464.4800, if you experience any problems.

**STATEMENT OF CONFIDENTIALITY**

THE INFORMATION CONTAINED IN THIS FAX IS INTENDED FOR THE EXCLUSIVE USE OF THE ADDRESSEE AND MAY CONTAIN CONFIDENTIAL OR PRIVILEGED INFORMATION. IF YOU ARE NOT THE INTENDED RECIPIENT, YOU ARE HEREBY NOTIFIED THAT ANY FORM OR DISSEMINATION OF THIS COMMUNICATION IS STRICTLY PROHIBITED. IF THIS FAX WAS SENT IN ERROR, PLEASE IMMEDIATELY NOTIFY US BY PHONE.

Received from <703 707 5598> at 9/18/02 2:06:56 PM [Eastern Daylight Time]

*Copy of paper  
#19  
-Duplicate copy-*

Official



PTO/SB/29 (10-00)

Approved for use through 10/31/2002. OMB 0661-0032

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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## CONTINUED PROSECUTION APPLICATION (CPA) REQUEST TRANSMITTAL

Submit an original, and a duplicate for fee processing

CHECK BOX, if applicable

☒ DUPLICATE

(Only for Continuation or Divisional applications under 37 CFR 1.53(d))

Address to:  Assistant Commissioner for Patents Box CPA Washington, DC 20231	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Attorney Docket No. of Prior Application</td> <td style="padding: 2px;">23452-092</td> </tr> <tr> <td style="padding: 2px;">First Named Inventor</td> <td style="padding: 2px;">Brendan P. Murray</td> </tr> <tr> <td style="padding: 2px;">Examiner Name</td> <td style="padding: 2px;">S. Channavajjala</td> </tr> <tr> <td style="padding: 2px;">Group / Art Unit</td> <td style="padding: 2px;">2177</td> </tr> <tr> <td style="padding: 2px;">Express Mail Label No.</td> <td style="padding: 2px;"></td> </tr> </table>	Attorney Docket No. of Prior Application	23452-092	First Named Inventor	Brendan P. Murray	Examiner Name	S. Channavajjala	Group / Art Unit	2177	Express Mail Label No.	
Attorney Docket No. of Prior Application	23452-092										
First Named Inventor	Brendan P. Murray										
Examiner Name	S. Channavajjala										
Group / Art Unit	2177										
Express Mail Label No.											

This is a request for a ☒ continuation or ☐ divisional application under 37 CFR 1.53(d).(continued prosecution application (CPA)) of prior application number 09/384,088filed on August 27, 1999, for System And Method For Evaluating Character Sets To Generate A Search Index.

### NOTES

**FILING QUALIFICATIONS:** The prior application identified above must be a nonprovisional application that is either: (1) complete as defined by 37 CFR 1.51(b), or (2) the national stage of an international application in compliance with 35 U.S.C. 371. Effective May 29, 2000, a CPA may only be filed in a utility or a plant application if the prior nonprovisional application was filed before May 29, 2000. A CPA may be filed in a design application regardless of the filing date of the prior application. See "Request for Continued Examination Practice changes to and Provisional Application Practice," Final Rule, 65 Fed. Reg. 50092 (Aug. 16, 2000); Interim Rule, 65 Fed. Reg. 14865 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office (Apr. 11, 2000).

**C-I-P NOT PERMITTED:** A continuation-in-part application cannot be filed as a CPA under 37 CFR 1.53(d), but must be filed under 37 CFR 1.53(b).

**EXPRESS ABANDONMENT OF PRIOR APPLICATION:** The filing of this CPA is a request to expressly abandon the prior application as of the filing date of the request for a CPA. 37 CFR 1.53(b) must be used to file a continuation, divisional, or continuation-in-part of an application that is not to be abandoned.

**ACCESS TO PRIOR APPLICATION:** The filing of this CPA will be construed to include a waiver of confidentiality by the applicant under 35 U.S.C. 122 to the extent that any member of the public who is entitled under the provisions of 37 CFR 1.14 to access to, copies of, or information concerning, the prior application may be given similar access to, copies of, or similar information concerning, the other application or applications in the file jacket.

**35 U.S.C. 120 STATEMENT:** In a CPA, no reference to the prior application is needed in the first sentence of the specification and none should be submitted. If a sentence referencing the prior application is submitted, it will not be entered. A request for a CPA is the specific reference required by 35 U.S.C. 120 and to every application assigned the application number identified in such request, 37 CFR 1.78(a).

**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

1. ☐ Enter the unentered amendment previously filed on \_\_\_\_\_ under 37 CFR 1.116 in the prior nonprovisional application
2. ☒ A preliminary amendment is enclosed.
3. ☐ This application is filed by fewer than all the inventors named in the prior application, 37 CFR 1.53 (d)(4).
  - a. ☐ DELETE the following inventor(s) named in the prior nonprovisional application:  
\_\_\_\_\_
  - b. ☐ The inventor(s) to be deleted are set forth on a separate sheet attached hereto.
4. ☐ A new power of attorney or authorization of agent (PTO/SB/B1) is enclosed.
5. ☐ Information Disclosure Statement (IDS) is enclosed:
  - a. ☐ PTO-1449
  - b. ☐ Copies of IDS Citations

PTO/SB/29 (10-00)

Approved for use through 10/31/2002. OMB 0651-0032  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
TOTAL CLAIMS (37 CFR 1.18(c) or (i))		39-20 =	19	x \$18.00=	\$ 342.00
INDEPENDENT CLAIMS (37 CFR 1.18(b) or (f))		8-3 =	5	x \$84.00=	420.00
MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.18(d))				x \$_____ =	
				BASIC FEE (37 CFR 1.16)	740.00
				Total of above Calculations =	1502.00
				Reduction by 60% for filing by small entity (Note 37 CFR 1.27).	
				* Reissue claims in excess of 20 and over original patent.	
				** Reissue independent claims over original patent.	
				TOTAL =	1502.00

6. ☐ Small entity status: Applicant claims small entity status. See 37 CFR 1.27.
7. ☒ The Commissioner is hereby authorized to credit overpayments or charge the following fees to Deposit Account No. 50 - 0311 :
- a. ☒ Fees required under 37 CFR 1.16.
- b. ☒ Fees required under 37 CFR 1.17.
- c. ☐ Fees required under 37 CFR 1.18.
8. ☒ A check in the amount of \$ 1612.00 is enclosed including the fee for a one-month extension of time.
9. ☐ Payment by credit card. Form PTO-2038 is attached.
10. ☐ Applicant requests suspension of action under 37 CFR 1.103(b) (fee under 37 CFR 1.17(l) enclosed).
11. ☐ New Attorney Docket Number, if desired  
(Prior application Attorney Docket Number will carryover to this CPA unless a new Attorney Docket Number has been provided herein.)
12. a. ☐ Receipt For Facsimile Transmitted CPA (PTO/SB/29A)
- b. ☐ Return Receipt Postcard (Should be specifically itemized, See MPEP 503)
13. ☒ Other: Petition for One-Month Extension of Time and fee: Preliminary Amendment

## 12. NEW CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Labelor ☐ New correspondence address below

Name

Address

City

State

Zip Code

Country

Telephone

Fax

## 13. SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print /Type)

Sean T. Ingram for James G. Gatto

Signature

Registration No. (Attorney/Agent)

48,283/32,694

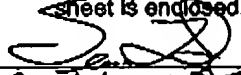

Date

8/28/02

(Page 2 of 2)

RES 75612v1

Received from &lt; 703 707 5598 &gt; at 9/18/02 2:06:56 PM [Eastern Daylight Time]

PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. 1.136(a)			Docket No. 23452-092
In re Application of: Brendan P. Murray et al.			
Serial No. 09/384,088	Filing Date August 27, 1999	Examiner S. Channavajjala	Group Art Unit 2177
Invention: SYSTEM AND METHOD FOR EVALUATING CHARACTER SETS TO GENERATE A SEARCH INDEX			
<b>TO THE ASSISTANT COMMISSIONER FOR PATENTS</b>			
This is a request under the provisions of 37 C.F.R. 1.136(a) to extend the period for filing a response to the Office Action of <u>8/24/2002</u> in the above-identified application.			
The requested extension is as follows:			
<input checked="" type="checkbox"/> One month <input type="checkbox"/> Two months <input type="checkbox"/> Three months <input type="checkbox"/> Four months <input type="checkbox"/> Five months			
The requested extension is as follows:			
<input checked="" type="checkbox"/> Large entity			
<input type="checkbox"/> Small entity			
Verified statement of small entity status as a small entity under 37 C.F.R. 1.27:			
<input type="checkbox"/> Is enclosed.			
<input type="checkbox"/> Has already been filed in this application.			
The fee for the extension of time is <u>\$110.00</u> and is to be paid as follows:			
<input checked="" type="checkbox"/> A check in the amount of the fee is enclosed.			
<input type="checkbox"/> Charge the amount of the fee to Deposit Account No. 50-0311. A duplicate copy of this sheet is enclosed			
<input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account No. 50-0311.			
<input checked="" type="checkbox"/> If an additional extension of time is required, please consider this a petition therefor and charge any additional fees which may be required to Deposit Account No. 50-0311. A duplicate copy of this sheet is enclosed.			
 Sean L. Ingram, Reg. No. 48,283 For: James G. Gatto, Reg. No. 32,894 MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO P.C. 12010 Sunset Hills Road, Suite 900 Reston, Virginia 20190-5839 (703) 484-4800		Dated: <u>8/28/02</u>	
RES 75507v1		 <b>29315</b> PATENT & TRADEMARK OFFICE	

# 20

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:	)	Attorney Docket No.: 23452-092
	)	
Brendan P. MURRAY <i>et al.</i>	)	Group Art Unit: 2177
	)	
CPA of Serial No.: 09/384,088	)	Examiner: S. Channavajjala
	)	
Filed: August 28, 2002	)	Confirmation No.: 7366
	)	
For: SYSTEM AND METHOD FOR EVALUATING CHARACTER SETS TO GENERATE A SEARCH INDEX		

**PRELIMINARY AMENDMENT**

- Duplicate copy -

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

**IN THE CLAIMS:**

Please amend the claims 1, 9, 17, 25, and 33-36 as follows below. In addition, please add new claims 37-39 as follow below.

1. **(Amended)** A method of evaluating characters in an inputted search string to generate a search index, comprising the steps of:
  - a) accepting an input of the characters of the search string, wherein the characters can be represented in any of a plurality of character sets corresponding to an undetermined language;

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b) evaluating the search string by comparing each of the characters of the search string to a plurality of pre-determined candidate character sets to determine one or more matches between the plurality of pre-determined candidate character sets and the search string; and

c) generating a search index based on the results of the evaluation of the search string and the plurality of pre-determined candidate character sets.

9. **(Amended)** A system for evaluating characters in an inputted search string to generate a search index, comprising:

an input interface to accept an input of the characters of the search string, wherein the characters can be represented in any of a plurality of character sets corresponding to an undetermined language; and

a processor unit, connected to the input interface, the processor unit evaluating the search string by comparing each of the characters of the search string to a plurality of pre-determined candidate character sets to determine one or more matches between the plurality of pre-determined candidate character sets and the search string, and generating a search index based on the results of the evaluation of the search string and the plurality of pre-determined candidate character sets.

17. **(Amended)** A system for evaluating characters in an inputted search string to generate a search index, comprising:

input interface means to accept an input of the characters of the search string, wherein the characters can be represented in any of a plurality of character sets corresponding to an undetermined language; and

processor means, connected to the input interface means, the processor means evaluating the search string by comparing each of the characters of the search string to a plurality of pre-determined candidate character sets to

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determine one or more matches between the plurality of pre-determined candidate character sets and the search string, and generating a search index based on the results of the evaluation of the search string and the plurality of pre-determined candidate character sets.

25. **(Amended)** A storage medium for storing machine readable code, the machine readable code being executable to evaluate characters in an inputted electronic search string according to the steps of:

- a) accepting an input of the characters of the search string, wherein the characters can be represented in any of a plurality of character sets corresponding to an undetermined language;
- b) evaluating the search string by comparing each of the characters of the search string to a plurality of pre-determined candidate character sets to determine one or more matches between the plurality of pre-determined candidate character sets and the search string; and
- c) generating a search index based on the results of the evaluation of the search string and the plurality of pre-determined candidate character sets.

33. **(Amended)** In a computer system comprising a processor, an input device and a storage device, which stores a character table bank comprising a predetermined number of columns and a number of character rows, each of which correspond to a universal code character, a method for implementing the processor to evaluate the universal code characters in an electronic search string, which is received at the input device, and enhance, based upon the evaluation of the electronic search string, a search index, which is accessible by the computer system and comprises a code page representing each of a plurality of the electronic search strings that are indexed, the method comprising:

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enabling the processor to create a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the character sets against which the universal code characters of the electronic search string are to be evaluated;

enabling the processor to receive the electronic search string at the input device, the electronic search string comprising a plurality of characters, wherein the plurality of characters can be represented in any of a plurality of character sets corresponding to an undetermined language;

evaluating the plurality of universal code characters of the electronic search string received at the input device by accessing the corresponding character row of the character table bank for each of a predetermined number of the characters of the electronic search string and

performing a logical AND operation between each of the corresponding character rows and the mask;

filling a character match list with an entry for each of the character sets that result in a non-zero result after the logical AND operation;

returning the character match list; and

enhancing the search index by indicating for each code page the character sets returned in the character match list.

**34. (Amended)** A computer system for evaluating universal code characters in an electronic search string and enhancing a search index, the computer system comprising:

a processor,



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an input device;

a storage device, which stores a character table bank comprising a predetermined number of columns and a number of character rows, each of which correspond to a universal code character;

wherein the processor evaluates the universal code characters in an electronic search string, which is received at the input device, and enhances, based upon the evaluation of the electronic search string, a search index, which is accessible by the computer system and comprises a code page representing each of a plurality of the electronic search string that are indexed;

and wherein the processor creates a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the character sets against which the universal code characters of the electronic search string are to be evaluated;

and wherein the processor enables receipt of the electronic search string at the input device, the electronic search string comprising a plurality of characters, wherein the plurality of characters can be represented in any of a plurality of character sets corresponding to an undetermined language;

and wherein the processor evaluates the plurality of universal code characters of the electronic search string received at the input device by accessing the corresponding character row of the character table bank for each of a predetermined number of the characters of the electronic search string and performs a logical AND operation between each of the corresponding character rows and the mask;

and wherein the processor fills a character match list with an entry for

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each of the character sets that result in a non-zero result after the logical AND operation;

and wherein the processor returns the character match list; and

wherein the processor enables enhancement of the search index by indicating for each code page the character sets returned in the character match list.

35. **(Amended)** A computer system for evaluating universal code characters in an electronic search string and enhancing a search index, the computer system comprising:

processor means,

input device means;

storage device means, which stores a character table bank comprising a predetermined number of columns and a number of character rows, each of which correspond to a universal code character;

wherein the processor means evaluates the universal code characters in an electronic search string, which is received at the input device means, and enhances, based upon the evaluation of the electronic search string, a search index, which is accessible by the computer system and comprises a code page representing each of a plurality of the electronic search string that are indexed;

and wherein the processor means creates a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the

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character sets against which the universal code characters of the electronic search string are to be evaluated;

and wherein the processor means enables receipt of the electronic search string at the input device means, the electronic search string comprising a plurality of characters, wherein the plurality of characters can be represented in any of a plurality of character sets corresponding to an undetermined language;

and wherein the processor means evaluates the plurality of universal code characters of the electronic search string received at the input device means by accessing the corresponding character row of the character table bank for each of a predetermined number of the characters of the electronic search string and performs a logical AND operation between each of the corresponding character rows and the mask;

and wherein the processor means fills a character match list with an entry for each of the character sets that result in a non-zero result after the logical AND operation;

and wherein the processor means returns the character match list; and

wherein the processor means enables enhancement of the search index by indicating for each code page the character sets returned in the character match list.

**36. (Amended)** An electronic storage medium for storing machine readable code, the machine readable code enabling a computer system comprising a processor, an input device and a storage device, which stores a character table bank comprising a predetermined number of columns and a number of character

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rows, each of which correspond to a universal code character, to execute the machine readable code and implement a method for evaluating the universal code characters in an electronic search string, which is received at the input device, and enhancing, based upon the evaluation of the electronic search string, a search index, which is accessible by the computer system and comprises a code page representing each of a plurality of the electronic search strings that are indexed, the method comprising:

enabling the processor to create a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the character sets against which the universal code characters of the electronic search string are to be evaluated;

enabling the processor to receive the electronic search string at the input device, the electronic search string comprising a plurality of characters, wherein the plurality of characters can be represented in any of a plurality of character sets corresponding to an undetermined language;

evaluating the plurality of universal code characters of the electronic search string received at the input device by accessing the corresponding character row of the character table bank for each of a predetermined number of the characters of the electronic search string and

performing a logical AND operation between each of the corresponding character rows and the mask;

filling a character match list with an entry for each of the character sets that result in a non-zero result after the logical AND operation;

returning the character match list; and

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enhancing the search index by indicating for each code page the character sets returned in the character match list.

37. **(New)** The method of claim 1, wherein the evaluating step compares each of the characters of the search string to one or more character sets of a character bank by parsing the characters of the search string and identifying the one or more character sets of the character bank that express each of the characters of the search string.

38. **(New)** The method of claim 37, wherein the evaluating step further compares each of the character sets of the character bank corresponding to each of the characters of the search string to pre-selected character sets of a bit mask to determine a match between each of the character sets of the character bank that correspond to the characters of the search string and the characters sets of the bit mask.

39. **(New)** The method of claim 38, wherein a first column of the character bank correspond to a first column of the bit mask, wherein the first column of the character bank, and wherein the first column of bit mask correspond to the same character set.

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**REMARKS**

This is a response to an Office Action mailed May 24, 2002 ("Office Action"). The Office Action has been reviewed, and in view of the foregoing amendments and following comments, reconsideration and allowance of all of the claims pending in the application are respectfully requested.

A petition for extension of time for one month with fee is filed concurrently herewith. Also, an excess claim fee for the three dependent claims added by this amendment is filed concurrently herewith as calculated in the amendment transmittal letter.

**Specification**

Applicants respectfully submit that the status of the cross-referenced applications has not changed since the previous filings of April 10 and April 11, 2002. Thus, the Examiner is respectfully requested to withdraw the objection.

**Non-Statutory Double Patenting Rejections**

Claims 1, 9, 17, and 25 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting. Applicants respectfully submit that a proper terminal disclaimer will be executed, if necessary, upon the indication that the claims are otherwise allowable.

**Status of the Claims**

Claims 1-39 are all the claims pending in this application. Claims 37-39 are added by this amendment. Claims 1-2, 4-10, 12-18, 20-26, and 28-32 stand

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rejected under 35 U.S.C. 103 (a) as allegedly being unpatentable over a U.S. Patent Number 5,778, 400 issued to Tateno ("Tateno") in view of U.S. Patent Number 5,946,648 issued to Halstead, Jr. et al. ("Halstead"). Claims 3, 11, 19, and 27 stand rejected under 35 U.S.C. 103 (a) as allegedly being unpatentable over a U.S. Patent Number 5,778, 400 issued to Tateno in view of U.S. Patent Number 5,946,648 issued to Halstead and further in view of U.S. Patent Number 6,321,192 issued to Houchin et al. ("Houchin"). Claims 33-36 stand rejected under 35 U.S.C. 103 (a) as allegedly being unpatentable over a U.S. Patent Number 6,141,656 issued to Ozbutun et al. ("Ozbutun") in view of U.S. Patent Number 5,778,213 issued to Shakib et al. ("Shakib").

**Rejection Under 35 U.S.C. §103(a)**

Claims 1-2, 4-10, 12-18, 20-26, and 28-32 stand rejected under 35 U.S.C. 103 (a) as allegedly being unpatentable over Tateno in view of Halstead. Applicants respectfully traverse this rejection. In an effort to advance prosecution, however, applicants have amended independent claims 1, 9, 17, and 25 to more clearly define this invention. Independent claim 1 is amended to recite the features of accepting an input of the characters of the search string, wherein the characters can be represented in any of a plurality of character sets corresponding to an undetermined language. Independent claims 9, 17, and 25 have been amended to recite similar features to the above quoted features. At least these features are not suggested or disclosed in Tateno, Halstead, or their combination.

The Examiner acknowledges that Tateno does not specifically detail the evaluating feature as claimed (see page 17 of the Office Action). The examiner, therefore, relies on Halstead to overcome the deficiencies of Tateno. In particular, the Examiner relies on the matching of stem characters in the prefix analysis in Halstead (see figures 18 and 19 of Halstead), where words are broken

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and prefix bound morphemes are identified. In contrast, the present invention is related to comparing each of the characters of the search string to a plurality of pre-determined candidate character sets to determine one or more matches between the plurality of pre-determined candidate character sets and the search string. Neither Tateno nor Halstead, alone or in combination disclose or suggest evaluating the search string by comparing each of the characters of the search string to a plurality of pre-determined candidate character sets to determine one or more matches between the plurality of pre-determined candidate character sets and the search string. Therefore, Applicants respectfully submit that independent claims 1, 9, 17, and 25 are allowable for at least the foregoing reasons.

Dependent claims 2, 4-8, 10, 12-16, 18, 20-24, 26, 28-32 each depend from one of independent claims 1, 9, 17 or 25 and, therefore, contain the features recited in the independent claims. As mentioned above, the cited references fail to suggest or disclose each of the features in the independent claims and, thus, necessarily fail to suggest or disclose each of the features in the dependent claims. Therefore, Applicants respectfully request that dependent claims 2, 4-8, 10, 12-16, 18, 20-24, 26, 28-32 are also allowable for at least the foregoing reasons.

Claims 3, 11, 19 and 27 stand rejected under 35 U.S.C § 103(a) as allegedly being unpatentable over Tateno, Halstead and further in view Houchin. Applicants respectfully traverse this rejection. As mentioned above, the combination of Tateno and Halstead fails to suggest or disclose at least the features of the independent claims. Houchin does not disclose these features either, and, thus, fails to cure the deficiencies of the proposed combination with respect to those features. Therefore, since claims 3, 11, 19 and 27 contain features of their independent claims, these claims are patentable over the combination of Tateno, Halstead and/or Houchin at least by virtue of their



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dependency. Applicants respectfully request that the rejection of claims 3, 11, 19 and 27 be withdrawn.

Claims 33-36 stand rejected under 35 U.S.C. 103 (a) as allegedly being unpatentable over Ozbutun in view of Shakib. Applicants respectfully traverse this rejection. In an effort to advance prosecution, however, applicants have amended independent claims 33-36 to more clearly define this invention. Claim 33 has been amended to recite the feature of "enabling the processor to receive the electronic search string at the input device, the electronic search string comprising a plurality of characters, wherein the plurality of characters can be represented in any of a plurality of character sets corresponding to an unknown language". At least this feature is not suggested or disclosed in Ozbutun, Shakib, or their combination.

In particular, the Examiner relies on Ozbutun for disclosing the feature of "enabling the processor to create a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the character sets against which the universal code characters of the electronic message are to be evaluated" (see page 21 of the Office Action). The Examiner refers to lines 15-45, and 46-54 of Ozbutun (column number not specified) in order to support his position. Applicants respectfully submit that Ozbutun discloses bitmaps and their segments which are not mask columns containing an indication of the character sets (see Column 7, lines 15-54 of Ozbutun). Nowhere does Ozbutun, disclose or suggest enabling the processor to create a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the character sets against which the universal code characters of the electronic message are to be evaluated. Independent claims 34-36 have been amended to recite similar features to the above quoted features. Therefore, Applicants respectfully submit

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that independent claims 33-36 are also allowable for at least the foregoing reasons.

New Claims 37-39 each depend from the independent claim 1 and, therefore, contain the features recited in the independent claim 1. As mentioned above, the cited references fail to suggest or disclose each of the features in the independent claims and, thus, necessarily fail to suggest or disclose each of the features in the dependent claims. Therefore, Applicants respectfully request that dependent claims 37-39 are also allowable for at least the foregoing reasons.

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**CONCLUSION**

Applicants respectfully submit that this application is in condition for allowance and such disposition is earnestly solicited. If the Examiner believes that a telephone conference or interview would advance prosecution of this application in any manner, the undersigned stands ready to conduct such a conference at the convenience of the Examiner.

It is believed that no other fees are due in connection with filing this Response. In the event that it is determined that fees are due, however, the Commissioner is hereby authorized to charge the undersigned's Deposit Account No. 50-0311, Attorney Docket No. 23452-092.

Respectfully submitted,

Mintz Levin Cohn Ferris Glovsky and Popeo, PC

Dated: 8/28/02

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**APPENDIX A – VERSION WITH MARKINGS TO SHOW CHANGES MADE  
IN THE CLAIMS**

1. (Amended) A method of evaluating characters in an [a] inputted search string [message] to generate a search index, comprising the steps of:
  - a) accepting an input of the characters of the search string [message], wherein the characters can be represented in any of a plurality of character sets corresponding to an undetermined language;
  - b) evaluating the search string [message] by comparing each of the characters of the search string [message] to a plurality of pre-determined [set of] candidate character sets to determine one or more [a] matches [match] between the plurality of pre-determined [set of] candidate character sets and the search string [message]; and
  - c) generating a search index based on the results of the evaluation of the search string [message] and the plurality of pre-determined candidate character sets.
  
9. (Amended) A system for evaluating characters in an [a] inputted search string [message] to generate a search index, comprising:
  - an input interface to accept an input of the characters of the search string [message], wherein the characters can be represented in any of a plurality of character sets corresponding to an undetermined language; and
  - a processor unit, connected to the input interface, the processor unit evaluating the search string [message] by comparing each of the characters of the search string [message] to a plurality of pre-determined [set of] candidate character sets to determine one or more [a] matches [match] between the plurality of pre-determined [set of] candidate character sets and the search string [message], and generating a search index based on the results of the evaluation of the search string [message] and the plurality of pre-determined candidate character sets.

17. **(Amended)** A system for evaluating characters in an [a] inputted search string [message] to generate a search index, comprising:

input interface means to accept an input of the characters of the search string [message], wherein the characters can be represented in any of a plurality of character sets corresponding to an undetermined language; and

processor means, connected to the input interface means, the processor means evaluating the search string [message] by comparing each of the characters of the search string [message] to a plurality of pre-determined [set of] candidate character sets to determine one or more [a] matches [match] between the plurality of pre-determined [set of] candidate character sets and the search string [message], and generating a search index based on the results of the evaluation of the search string [message] and the plurality of pre-determined candidate character sets.

25. **(Amended)** A storage medium for storing machine readable code, the machine readable code being executable to evaluate characters in an inputted electronic search string [message] according to the steps of:

a) accepting an input of the characters of the search string [message], wherein the characters can be represented in any of a plurality of character sets corresponding to an undetermined language;

b) evaluating the search string [message] by comparing each of the characters of the search string [message] to a plurality of pre-determined [set of] candidate character sets to determine one or more [a] matches [match] between the plurality of pre-determined [set of] candidate character sets and the search string [message]; and

c) generating a search index based on the results of the evaluation of the search string [message] and the plurality of pre-determined candidate character sets.

33. **(Amended)** In a computer system comprising a processor, an input device and a storage device, which stores a character table bank comprising a predetermined number of columns and a number of character rows, each of which correspond to a universal code character, a method for implementing the processor to evaluate the universal code characters in an electronic search string [message], which is received at the input device, and enhance, based upon the evaluation of the electronic search string [message], a search index, which is accessible by the computer system and comprises a code page representing each of a plurality of the electronic search strings [messages] that are indexed, the method comprising:

enabling the processor to create a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the character sets against which the universal code characters of the electronic search string [message] are to be evaluated;

enabling the processor to receive the electronic search string [message] at the input device, the electronic search string comprising a plurality of characters, wherein the plurality of characters can be represented in any of a plurality of character sets corresponding to an undetermined language;

evaluating the plurality of universal code characters of the electronic search string [message] received at the input device by accessing the corresponding character row of the character table bank for each of a predetermined number of the characters of the electronic search string [message] and

performing a logical AND operation between each of the corresponding character rows and the mask;

filling a character match list with an entry for each of the character sets that result in a non-zero result after the logical AND operation;

returning the character match list; and

enhancing the search index by indicating for each code page the character sets returned in the character match list.

34. **(Amended)** A computer system for evaluating universal code characters in an electronic search string [message] and enhancing a search index, the computer system comprising:

a processor,

an input device;

a storage device, which stores a character table bank comprising a predetermined number of columns and a number of character rows, each of which correspond to a universal code character;

wherein the processor evaluates the universal code characters in an electronic search string [message], which is received at the input device, and enhances, based upon the evaluation of the electronic search string [message], a search index, which is accessible by the computer system and comprises a code page representing each of a plurality of the electronic search string [messages] that are indexed;

and wherein the processor creates a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the character sets against which the universal code characters of the electronic search string [message] are to be evaluated;

and wherein the processor enables receipt of the electronic search string [message] at the input device, the electronic search string comprising a plurality of characters, wherein the plurality of characters can be represented in any of a plurality of character sets corresponding to an undetermined language;

and wherein the processor evaluates the plurality of universal code characters of the electronic search string [message] received at the input device by accessing the corresponding character row of the character table bank for each of a predetermined number of the characters of the electronic search string [message] and performs a logical AND operation between each of the corresponding character rows and the mask;

and wherein the processor fills a character match list with an entry for each of the character sets that result in a non-zero result after the logical AND operation;

and wherein the processor returns the character match list; and

wherein the processor enables enhancement of the search index by indicating for each code page the character sets returned in the character match list.

35. **(Amended)** A computer system for evaluating universal code characters in an electronic search string [message] and enhancing a search index, the computer system comprising:

processor means,

input device means;



storage device means, which stores a character table bank comprising a predetermined number of columns and a number of character rows, each of which correspond to a universal code character;

wherein the processor means evaluates the universal code characters in an electronic search string [message], which is received at the input device means, and enhances, based upon the evaluation of the electronic search string [message], a search index, which is accessible by the computer system and comprises a code page representing each of a plurality of the electronic search string [messages] that are indexed;

and wherein the processor means creates a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the character sets against which the universal code characters of the electronic search string [message] are to be evaluated;

and wherein the processor means enables receipt of the electronic search string [message] at the input device means, the electronic search string comprising a plurality of characters, wherein the plurality of characters can be represented in any of a plurality of character sets corresponding to an undetermined language;

and wherein the processor means evaluates the plurality of universal code characters of the electronic search string [message] received at the input device means by accessing the corresponding character row of the character table bank for each of a predetermined number of the characters of the electronic search string [message] and performs a logical AND operation between each of the corresponding character rows and the mask;

and wherein the processor means fills a character match list with an entry

for each of the character sets that result in a non-zero result after the logical AND operation;

and wherein the processor means returns the character match list; and

wherein the processor means enables enhancement of the search index by indicating for each code page the character sets returned in the character match list.

36. **(Amended)** An electronic storage medium for storing machine readable code, the machine readable code enabling a computer system comprising a processor, an input device and a storage device, which stores a character table bank comprising a predetermined number of columns and a number of character rows, each of which correspond to a universal code character, to execute the machine readable code and implement a method for evaluating the universal code characters in an electronic search string [message], which is received at the input device, and enhancing, based upon the evaluation of the electronic search string [message], a search index, which is accessible by the computer system and comprises a code page representing each of a plurality of the electronic search strings [messages] that are indexed, the method comprising:

enabling the processor to create a mask comprising a number of mask columns equivalent to the predetermined number of columns in the character table bank, wherein the mask columns contain an indication of the character sets against which the universal code characters of the electronic search string [message] are to be evaluated;

enabling the processor to receive the electronic search string [message] at the input device, the electronic search string comprising a plurality of

characters, wherein the plurality of characters can be represented in any of a plurality of character sets corresponding to an undetermined language;

evaluating the plurality of universal code characters of the electronic search string [message] received at the input device by accessing the corresponding character row of the character table bank for each of a predetermined number of the characters of the electronic search string [message] and

performing a logical AND operation between each of the corresponding character rows and the mask;

filling a character match list with an entry for each of the character sets that result in a non-zero result after the logical AND operation;

returning the character match list; and

enhancing the search index by indicating for each code page the character sets returned in the character match list.

Claims 37-39 ARE ADDED AS NEW CLAIMS.

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